

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended): A radio transmitter-receiver wherein a pilot symbol that has undergone M-chip spreading on a frequency axis and N-chip spreading on a time axis by means of a spreading code having an $M \times N$ chip length (where M and N are any integers greater than or equal to 2) is used in the transmitter, and in the receiver, a spreading code that is not used in spreading a pilot signal is used as a despreading code to despread a received signal and then estimate noise and interference power;

wherein said spreading code that is used in spreading a pilot symbol and said despreading code that is used in despreading are assigned so as to be orthogonal at least in only N chips on the time axis and/or in only M chips on the frequency axis, and

wherein at least one of code that is orthogonal to said despreading code that is used in despreading even if only in M chips on the frequency axis and/or code that is orthogonal to said despreading code that is used in despreading even if only in N chips on the time axis is preferentially assigned as said spreading code that is used in spreading pilot symbols,

wherein the transmitter-receiver further comprises means for detecting whether either of channel is fluctuated on the frequency axis or channel is fluctuated on the time axis,

wherein:

code that is orthogonal even if only in M chips on the frequency axis is assigned as said spreading code that is used in spreading a pilot symbol when channel is fluctuated on the time axis; and

code that is orthogonal even if only in N chips on the time axis is assigned as said spreading code that is used in spreading a pilot symbol when channel is fluctuated on the frequency axis.

2-3. (canceled).

4. (currently amended): A radio transmitter-receiver according to ~~claim 3~~ claim 1, wherein delay spread is used as an index of channel fluctuation on the frequency axis.

5. (currently amended): A radio transmitter-receiver according to ~~claim 3~~ claim 1, wherein a coherent band is used as an index of channel fluctuation on the frequency axis.

6. (currently amended): A radio transmitter-receiver according to ~~claim 3~~ claim 1, wherein Doppler frequency is used as an index of channel fluctuation on the time axis.

7. (currently amended): A radio transmitting and receiving method wherein a pilot symbol that has undergone M-chip spreading on a frequency axis and N-chip spreading on a time axis by means of a spreading code having an $M \times N$ chip length (where M and N are any integers greater than or equal to 2) is used in the transmitter, and in the receiver, a spreading code that is not used in spreading a pilot signal is used as a despreading code to despread a received signal and then estimate noise and interference power;

wherein said spreading code that is used in spreading a pilot symbol and said despreading code that is used in despreading are assigned so as to be orthogonal at least in only N chips on the time axis and/or in only M chips on the frequency axis, and

wherein at least one of code that is orthogonal to said despreading code that is used in despreading even if only in M chips on the frequency axis and/or code that is orthogonal to said despreading code that is used in despreading even if only in N chips on the time axis is preferentially assigned as said spreading code that is used in spreading pilot symbols,

wherein:

code that is orthogonal even if only in M chips on the frequency axis is assigned as said spreading code that is used in spreading a pilot symbol when channel is fluctuated on the time axis; and

code that is orthogonal even if only in N chips on the time axis is assigned as said spreading code that is used in spreading a pilot symbol when channel is fluctuated on the frequency axis.

8. (previously presented): A radio transmitter-receiver according to claim 1, wherein the spreading code is at least one of a plurality of orthogonal spreading codes.